



Contribution ID: 17

Type: Poster

Diffusion in a system with a membrane that can change the state of the particles passing through it.

Using a new method, time evolution of the probability distribution of the number of particle passes through a thin membrane will be derived. As far as we know, a distribution of the number of particle's passes between selected points of the system (membrane surfaces) have not been determined yet.

We assume that a passage of a particle through the membrane may cause a change in particle's state or vanishing (absorption) of the particle. These processes will be included in the model of particle diffusion in a system with a thin, partially permeable membrane that separates different media in which normal diffusion, subdiffusion or slow subdiffusion can occur [1]. The probability distributions (Green's functions) and other functions characterizing the process, such as the first passage time distributions, will be shown.

[1] T. Kosztolowicz, Phys. Rev. E 99, 022127 (2019)

Summary

Primary author: KOSZTOŁOWICZ, Tadeusz (Institute of Physics, Jan Kochanowski University in Kielce)

Presenter: KOSZTOŁOWICZ, Tadeusz (Institute of Physics, Jan Kochanowski University in Kielce)

Session Classification: Session 8